INTERNAL USE ONLY

Products Instruction

VMC

DNM/Mynx

February 2014
Doosan Infracore
Machine Tools BG

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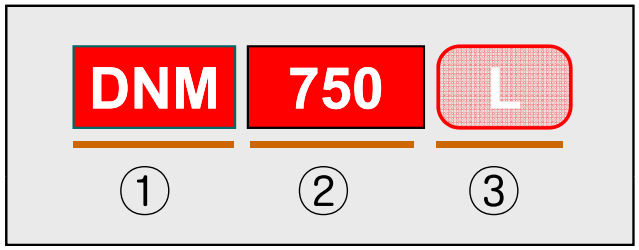
Designation of Vertical/Horizontal Machining Center



※ Some models are not exactly match the explanations above.

① Machine group

- DT : Vertical, Doosan Tapping Center
- DNM : Vertical, Standard _ LM Guideway
- Mynx : Vertical, Standard _ Box Guideway
- VM : Vertical, Mold & Die _ General
- DVM : Vertical, Mold & Die _ High speed
- NX : Vertical, Mold & Die _ High speed & precision
- FM : Vertical, Ultra-speed,
- VC : Vertical, traveling Column
- VCF : Vertical, traveling Column, Fixed table
- BM : Vertical, Bridge Type Machining Center

- HC : Horizontal, Compact
- HM/NHM : New Horizontal, Massive (Heavy duty)
- HP/NHP : New Horizontal, Productive (high speed)

② Nominal Size

- Vertical : Y axis travel
- 5-axis : Rotary table diameter
- Horizontal : Pallet size

③ Suffix & Application

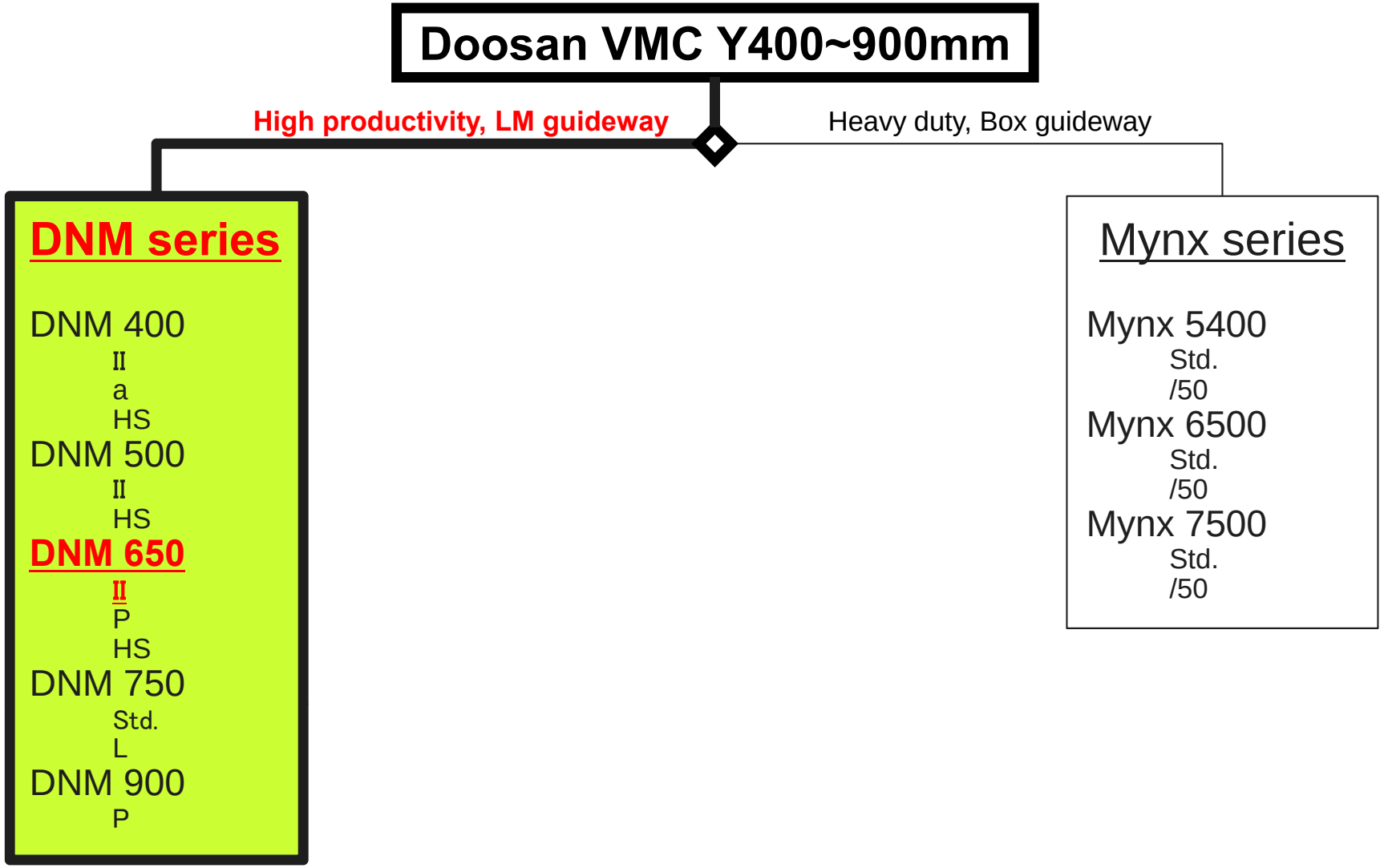
- /40, /50 : Tool taper #40, #50
- L : Long Stroke
- D : Dual pallet
- a : Compact size
- HS : High Specification
- /5AX : 5-Axes
- P : Aluminum Panel maching
- M : Mold & Die
- II : Facelift & Upgrade

Vertical MC

		a	b		c	d				e			
Y travel or Rotary table dia. (mm)		Tapping Center	VMC		Productivity VMC	Die & Mold VMC				5axis VMC			
		DT series	DNM series	Mynx series	VC series	VM series	DVM series	NX series	FM *linear* series	DNM series	NX series	VC	FM *linear* series
													
Y travel (mm)	~ 450	DT 400 DT 360D DT 400L	DNM 400 II		VC 430			NX 4500 II	FM 400 *linear*				
	~550		DNM 500 II	Mynx 5400	VC 510	VM 5400 VM 560	DVM 500 II	NX 5500 II					
	~670		DNM 650 II	Mynx 6500		VM 6500	DVM650 II	NX 6500 II					
	~750		DNM 750	Mynx 7500		VM 750							
	~850												
	~960		DNM 900			VM 960							
	~1260					VM 1260							
Rotary table dia. (mm)	350									DNM 350/5AX			FM 350/5AX *linear*
	500										NX 500/5AX		
	630											VC 630/5AX	

b VMC Y400~900

Concept…



DNM series

Function →

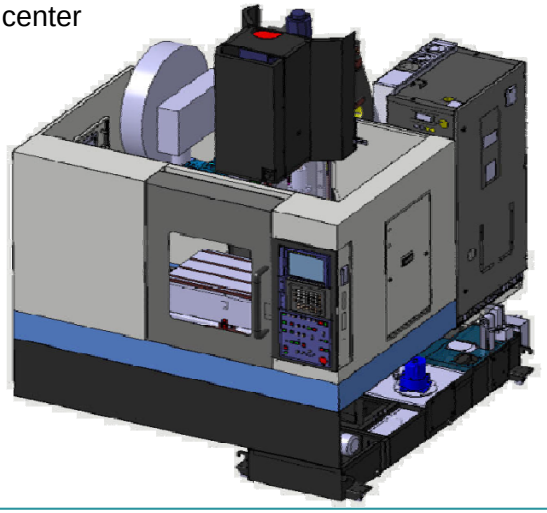
Size ↓

Y travel (mm)	Tool taper	X travel (mm)	Conventional		
			Standard	High speed	Heavy duty
435	#40	635	DNM 400a		
		762	DNM 400 II	DNM 400HS	
540	#40	1020	DNM 500 II	DNM 500HS	
		1020			Mynx 5400
	#50				Mynx 5400/50
670	#40	1400	DNM 650P		
		1270	DNM 650 II	DNM 650HS	
		1270			Mynx 6500
	#50				Mynx 6500/50
762	#40	1630	DNM 750		
		2160	DNM 750L		
		1525			Mynx 7500
	#50				Mynx 7500/50
900	#40	1650	DNM 900P		

1 DNM series _ DNM400α

HIGH PRODUCTIVITY & COMPACT

- High productivity & Space-saving vertical machining center



MAJOR SPECIFICATION (DRAFT)

- STROKE(X/Y/Z) : 635/435/510 mm
- TABLE : 790x435mm, 400kgf
- SPINDLE : 8,000 rpm, BT40
- SPINDLE POWER : 7.5/11kW
- RAPID TRAVERSE (X/Y/Z) : 30/30/30 m/min
- TOOL : 20T
- ATC TIME : 1.3 sec
- NC : FANUC I-SERIES

APPLICATION

- AUTOMOTIVE COMPONENT
- ELECTRONIC, IT COMPONENT

TYPICAL WORKPIECE

- HUB
- HEAT SINK

MAIN FEATURES

- HIGH SPEED TAPPING, HIGH PRODUCTIVITY
- HIGH SPEED ATC : T-T 1.3s
- CHIP AUGER SYSTEM (Std.)
- COMPACT SIZE : DNM400a - 2060(W) x 2130(L)mm

COMPETITOR

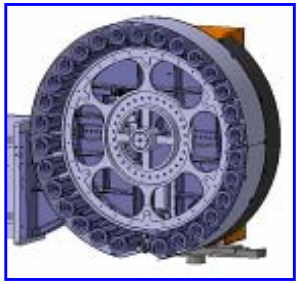
- HAAS, HYUNDAI - KIA

STATUS / SCHDULE

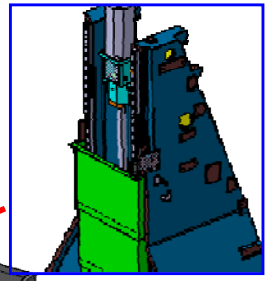
- MASS PRODUCTION : 2010. Apr. ~

1 DNM Series: DNM 400 α _ Major units & sales point

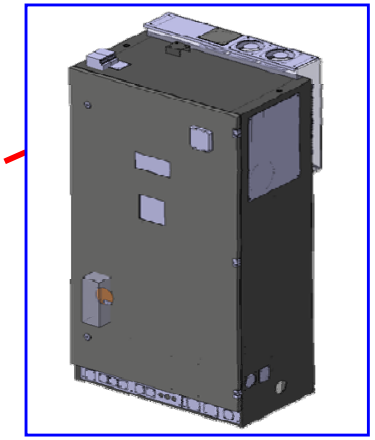
CAM TYPE ATC
20T



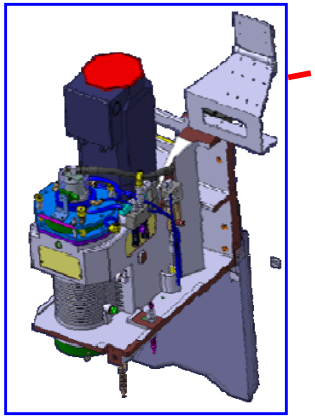
ARCH SHAPED
COLUMN

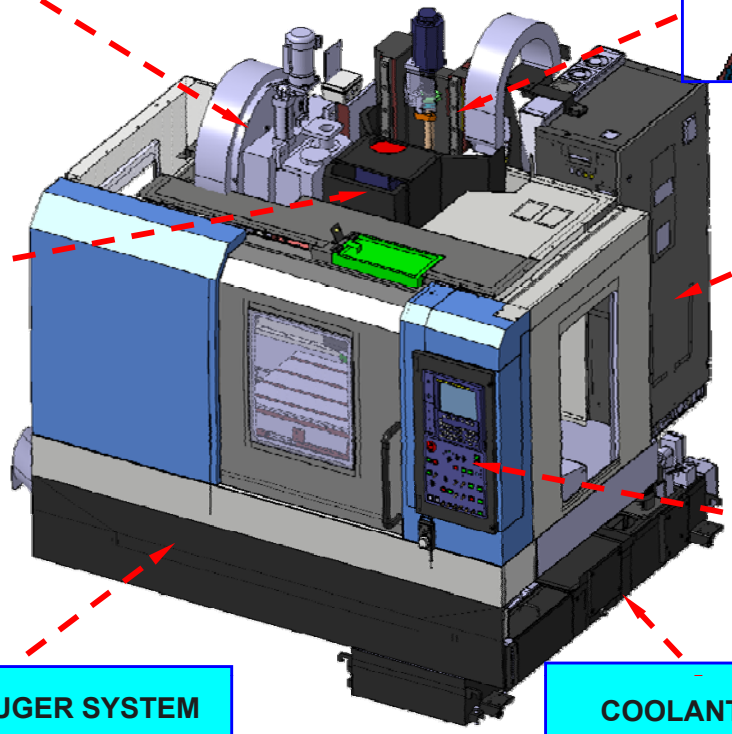


COMPACT PDP



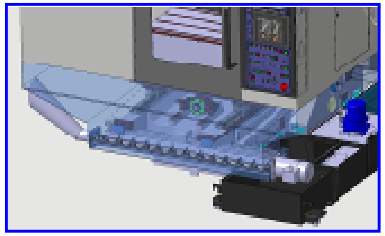
SPINDLE
8000RPM



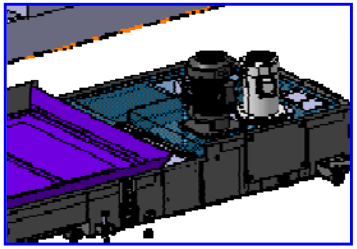


OP PANEL

CHIP AUGER SYSTEM



COOLANT TANK



1 DNM Series: DNM 400 α _ Sales point (1/2)

The smallest VMC in Doosan with competitve Price

Description		DNM400	DNM400 a
Stroke			
X-axis	mm	762	635
Y-axis	mm	435	435
Z-axis	mm	510	510
Rapid travers			
X-axis	m/min	36	30
Y-axis	m/min	36	30
Z-axis	m/min	30	30
Table			
Table size	mm	920X435	790X 435
Table load	kg	600	400
Spindle(Std.)			
RPM	rpm	8000	8000
Power	kW	15/11	7.5/11
Torque	Nm	106/70	
Tool Spec.		BT40	CAT40
ATC			
No. of tool		30	20
Max. Tool diameter	mm	80	80
Max. Tool diameter for vacant adjacent pockets	mm	125	125
Max. Tool length	mm	300	300
Tool exchange time	s	1.3	1.3
		CAM ATC	cam
NC			
자사 CNC			
Fanuc		0i-MC	0i-MD
Heidenhain		iTNC530(개발중)	
Siemens		개발예정	

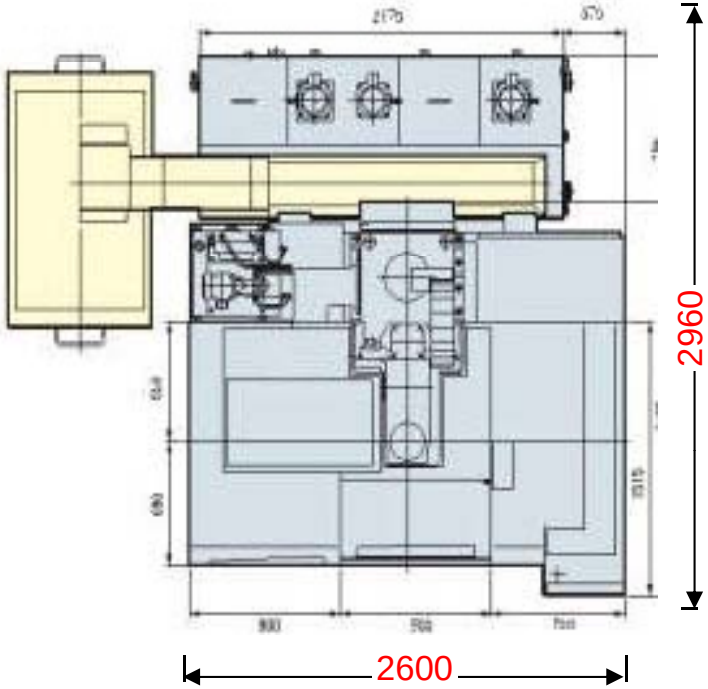
Compact

1 DNM Series: DNM 400 α_Sales point (2/2)

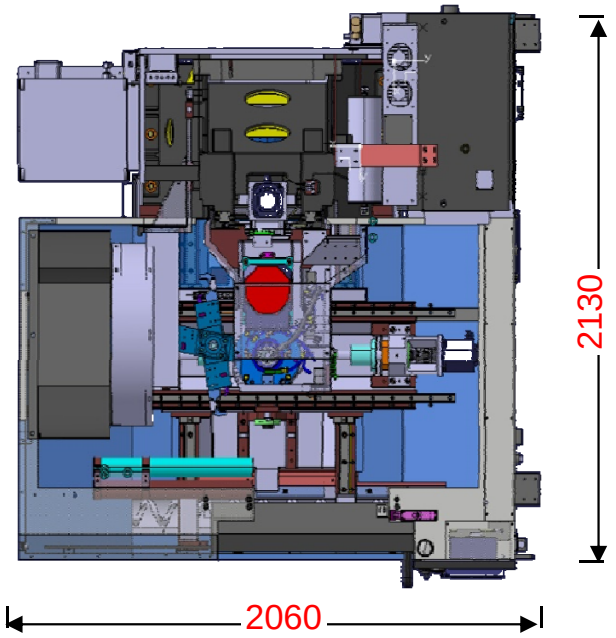
COMPACT SIZE

Model	DNM400a	DNM400	WIA VX460
L(mm)	2,130	2,092	2,960
W(mm)	2,060	2,465	2,600
Area(m^2)	4.4	5.2	7.7

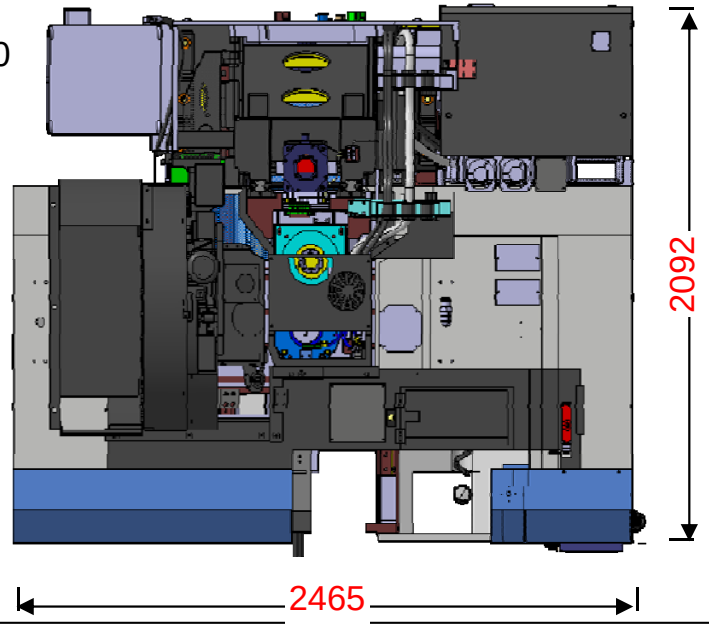
VX460



DNM400a



DNM400



1 DNM series: DNM 400/500/650 II Upgrade

HIGH PRODUCTIVITY VMC

MAJOR SPECIFICATIONS

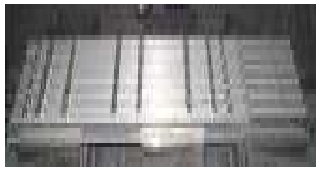
- Stroke (X/Y/Z) DNM400 II : 762 / 435 / 510 mm
  DNM500 II : 1020 / 540 / 510 mm
  DNM650 II : 1270 / 670 / 625 mm
- Table size DNM400 II : 920 x 435 mm, 600kgf
  DNM500 II : 1200 x 540 mm, 800kgf
  DNM650 II : 1300 x 670 mm, 1000kgf
- Spindle #40 - 8,000 rpm, 15kw (F,Std) / 16.5kw (SIE,Std)
  - 12,000 rpm, 15kw(F,Opt.) /16.5kw (SIE. Opt.)
- Rapid traverse (X/Y/Z) : 36/36/30 m/min
- Tool storage capacity : 30T(Std.), 40T (Opt.)
- Tool change time : 1.3 sec (T-T-T)
- NC : F- 0iMD // SIE - S828D // HEID i-TNC530

APPLICATION

- AUTOMOTIVE COMPONENT
- IT, Semi conductor

TYPICAL WORKPIECE

- Cover of valve
- Plate



FEATURES

- All axis Roller LM guide for higher speed & accuracy
- 12000 r/min direct driven spindle
- Improved the rigidity of frame by FEM analysis.
- Two screw conveyors for easy chip removal
- Various NC – FANUC, SIEMENS HEIDENHAIN
- HIGH SPEED & PRODUCTIVITY

COMPATITORS

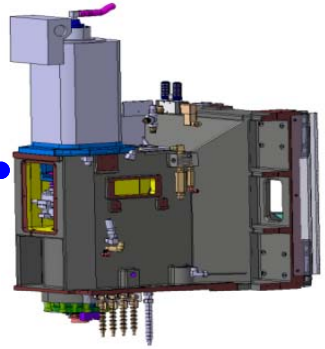
- MORI - NVX, HWACHEON

STATUS / SCHDULE

- Under Mass Production :2008~

1 DNM series: DNM 400/500/650 II Upgrade

Sales points…



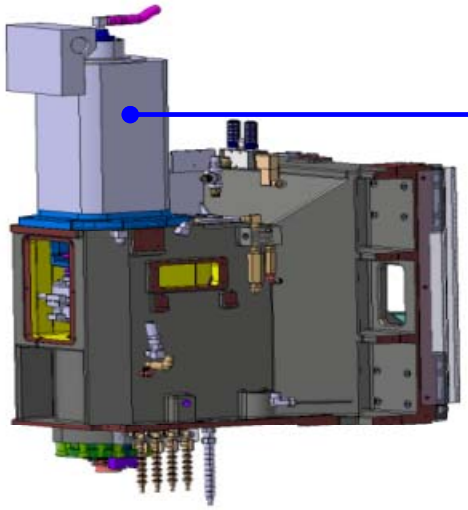
1 Direct coupled spindle for 12kr/min (Opt.)

2 Roller type LM guideway in X/Y/Z all axes for high rigidity & long life

3 New OP & Fanuc 0iTD with 10.4” Color LCD & EZ-i for convenience

❶ Sales point

Direct coupled spindle for 12000r/min(Opt.) to improve productivity, accuracy, roughness and comfortability.



Model	DNM Ⅱ	Smart VMC	VF
Spindle type	8k: Belt **12k: Direct**	12k: Direct	8k: Belt 12k: Direct

- **Reduced Spindle Acc./Dec. time: 56% down**
  - **Acc. time(0➔12kr/min): 4.9 ➔ 2.16sec**
  - **Dec. time(12➔0kr/min): 4.9 ➔ 2.21sec**

➢ **Increased productivity 10% up Doosan's test item**

- **Reduced Vibration(Y axis): Magnitude 70% down**

➢ **Better surface roughness**

- **Reduced Thermal displacement of Spindle (Y/Z axis) with thermal error compensation (Std.): over 50% down**

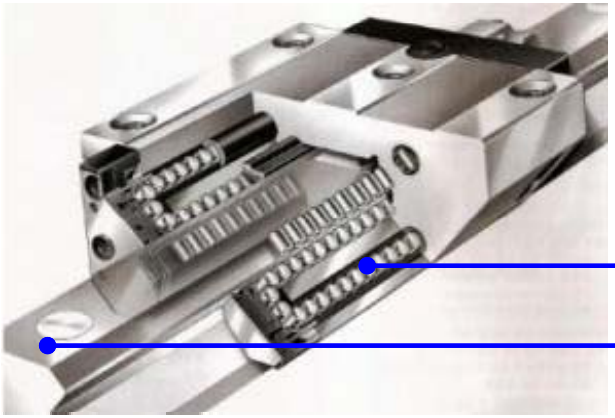
➢ **Better machining accuracy**

- **Reduced Noise: Amplitude 56% down**

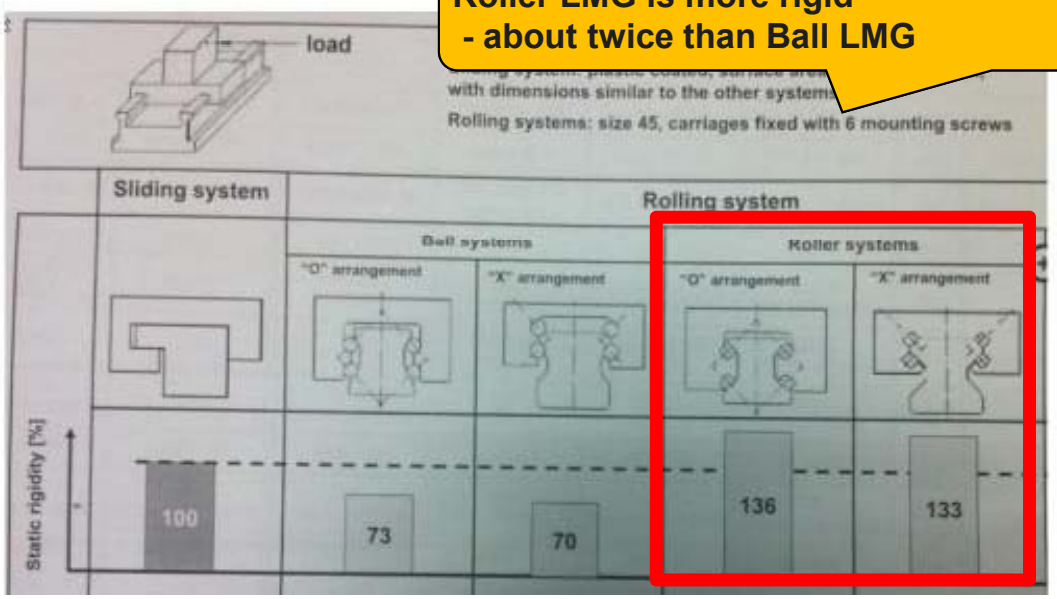
➢ **More comfortable environment**

② Sales point

Roller type LM guideway in X/Y/Z all axes for high rigidity, geometry accuracy, & long life



Model	DNM II		Mazak Smart VMC		HAAS VF
LM type	Roller	=	Roller	>	Ball+Roller
LM width X/Y/Z	34/45/45mm	>	34/34/34mm		
Ball screw dia. X/Y/Z	40mm	>	36mm		



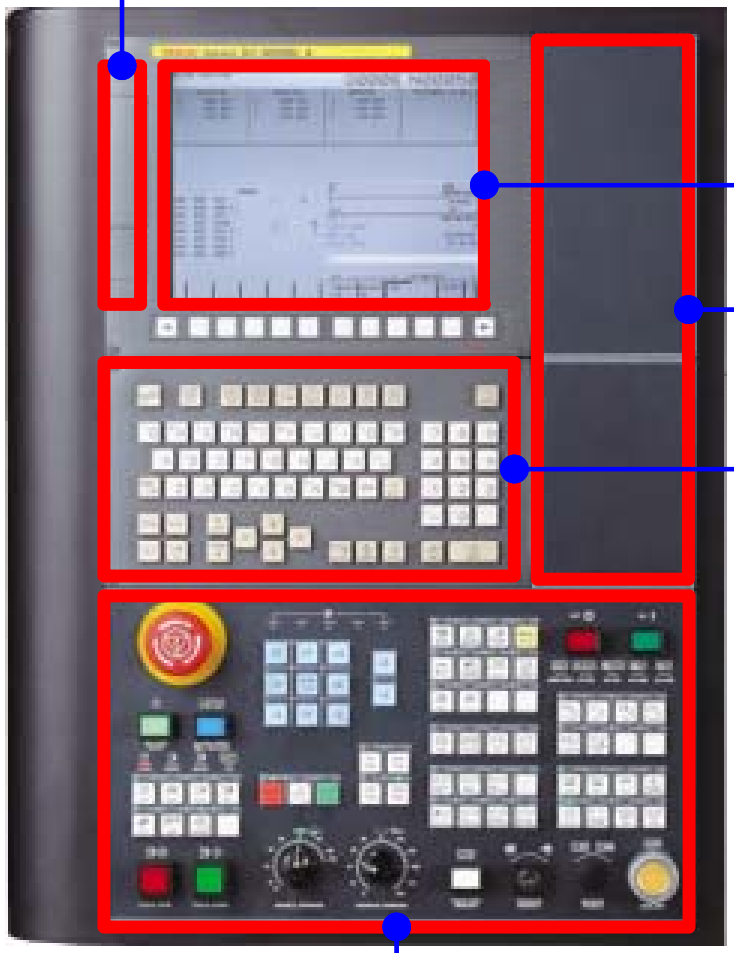
Roller LMG is more rigid
- about twice than Ball LMG

Roller LMG's life is longer about twice than Ball LMG

	X axis	Service Life
Roller▸	RG35C-ZB	22,930(km)
Ball▸	HG35C-ZB	10,146(km)
	Y axis	Service Life
Roller▸	RG45C-ZA	88,345 (km)
Ball▸	HG45C-ZA	41,654 (km)
	Z axis	Service Life
Roller▸	RG45C-ZA	116,088 (km)
Ball▸	HG45C-ZA	60,185 (km)

❸ Sales point

New OP & Fanuc 0iTD with 10.4” Color LCD & EZ-i for convenience



- USB & PCMCIA Card ports as std.
- Fanuc 0iTD w/ 10.4” Color LCD & EZ-i
- Optional buttons such as fixture clamp/unclamp button, counter, timer or etc.
- QWERTY keyboard
- New designed Operation Panel w/ Hot keys for easy operation

1 DNM series: DNM 650P

VMC FOR PANEL TYPE WORKPIECE

- High productivity vertical machining center

MAJOR SPECIFICATION

- STROKE : 1400/670/625 mm
- TABLE SIZE : 1500 x 680 mm
  LOAD ; 600kg
- SPINDLE : 8,000(12,000) rpm, BT40
- SPINDLE POWER : 15/18.5(11/15)kW
- RAPID TRAVERSE (X/Y/Z) : 36/36/30 m/min
- ATC TIME : 1.3 sec
- NC : FANUC I-SERIES

APPLICATION

- LCD PANEL COMPONENTS & EQUIPMENTS
- IT FACILITIES

TYPICAL WORKPIECE

- LCD/LED FRAME
- THIN & LIGHT PLATE

MAIN FEATURES

- ROLLER LM GUIDEWAY
- 1400mm X-STROKE
  & LARGE TABLE SIZE(1500x680mm)
- MAX DOOR OPEN WIDTH : 1410mm
- SMALL FLOOR SPACE(W x L) : 3350 x 2674
- NEW DESIGN FOR INCREASING RELIABILITY AND PERFORMANCE

COMPETITOR

- HAAS, HYUNDAI - KIA

STATUS / SCHDULE

- MASS PRODUCTION : OCT. 2010~

1 DNM series: DNM 650P Specification

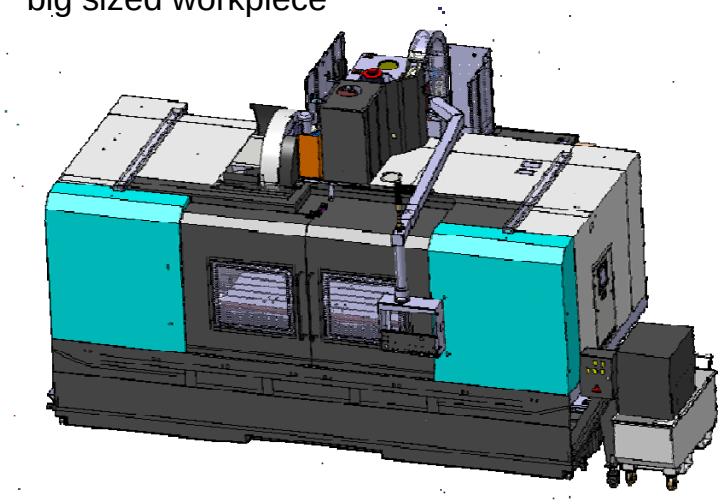
Standard Specification

Spec.			Unit	DNM Series			
				DNM400	DNM500	DNM650	DNM650P
Stroke	X/Y/Z		mm(Inch)	762/435/510 (30/17.1/20)	1,020/540/510 (40/21.2/20)	1,270/670/625 (50/26.3/24.6)	1400/670/625 (55.2/26.3/24.6)
Guideway			Type	LM Guide	LM Guide	LM Guide	Roller LM Guide
Table	size		mm(Inch)	920x435(36.2x17.1)	1200x540(47.2x21.2)	1300x670(51.2x26.3)	1500x680(59x26.8)
	Allowable load		kg(lb)	600(1,322)	800(1,764)	1,000(2,205)	600(1,323)
Spindle	Motor power (Max)		kW(hp)	15(20)	⇦	18.5(25)	18.5(25)
	Max. torque		N.m(l bf-ft)	95.5(70.4)	⇦	117.7(86.8)	117.7(86.8)
	Spindle speed	Std.	rpm	8,000(Belt)	⇦	8,000(Belt)	8,000(Belt)
		Opt.		12,000(Belt)	⇦	12,000(Belt)	12,000(Belt)
	Taper		#	40	⇦	⇦	⇦
Tool Magazine	Tool storage	Std.	EA	30	⇦	⇦	⇦
		Opt.		40	⇦	⇦	⇦
	Max tool dia.		mm(Inch)	80(3.15)/76(3)	⇦	⇦	⇦
	Max tool length		mm(Inch)	300(11.8)	⇦	⇦	⇦
	Tool changer arm		Type	CAM	⇦	⇦	⇦
	Tool change time		sec	1.3	⇦	⇦	⇦
Rapid traverse(X/Y/Z)			mm/min (Inch/min)	36/36/30 (1,417/1,417/1,181)	⇦	⇦	⇦
Display			std.	8.4" color LCD	⇦	⇦	⇦
			opt.	10.4" color LCD	⇦	⇦	⇦
Controller			Fanuc (SIE // HEI)	0iMD // S828 // ITNC530i	⇦	⇦	0iM-D

1 DNM series: DNM750(L)

HIGH SPEED VMC FOR GENERAL PURPOSE

- High productivity vertical machining center for big sized workpiece



MAJOR SPECIFICATION (DRAFT)

- STROKE : 1660(2150)/762/650 mm
- RAPID TRAVERSE
  - STD. VERSION (X/Y/Z) : 30/30/24 m/min
  - L VERSION (X/Y/Z) : 24/24/24 m/min
- SPINDLE : 8,000(12,000) rpm, BT40
- SPINDLE POWER : 15/18.5kW
- ATC TIME : 1.3 sec
- NC : FANUC I-SERIES

APPLICATION

- FACTORY AUTOMATION
- COMMERCIAL VEHICLE

TYPICAL WORKPIECE

- BEAM FOR FACTORY AUTOMATION

MAIN FEATURES

- ROLLER LM GUIDEWAY
- MINMIZED TABLE OVERHNANG
  ➔ 4- ROWS LM FOR Y-AXIS (L-VERSION)
- 2- DOORS FOR WIDE OPENING
- SWIVELING PENDANT ARM

COMPETITOR

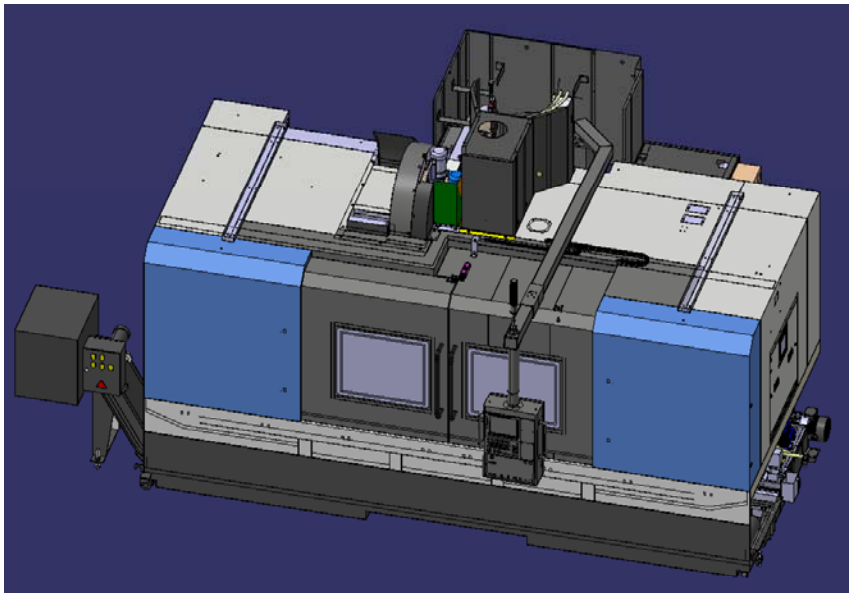
- MAZAK – VTC , HAAS

STATUS / SCHDULE

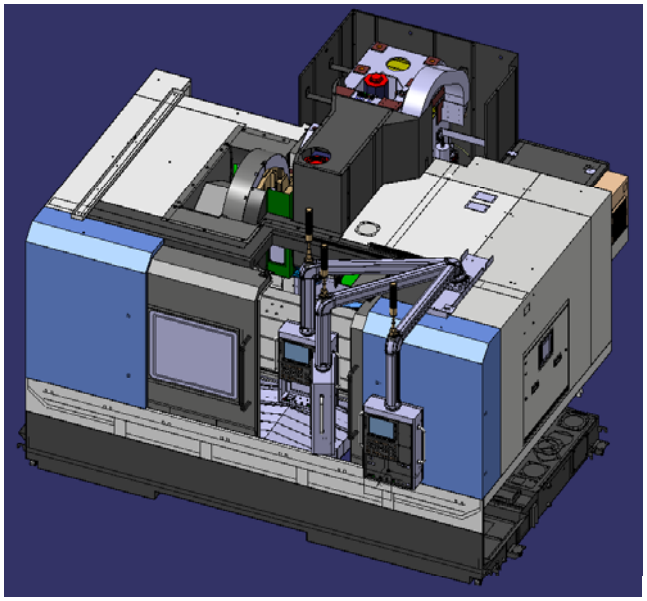
- PROTO MC (L Version) : DIMF 2011 // PRODUCTION : Nov. 1~
- PROTO MC (S Version) : June. ’11 // PRODUCTION : Nov. ~

1 DNM series: DNM750(L) PENDANT ARM

Previous



DNM900P



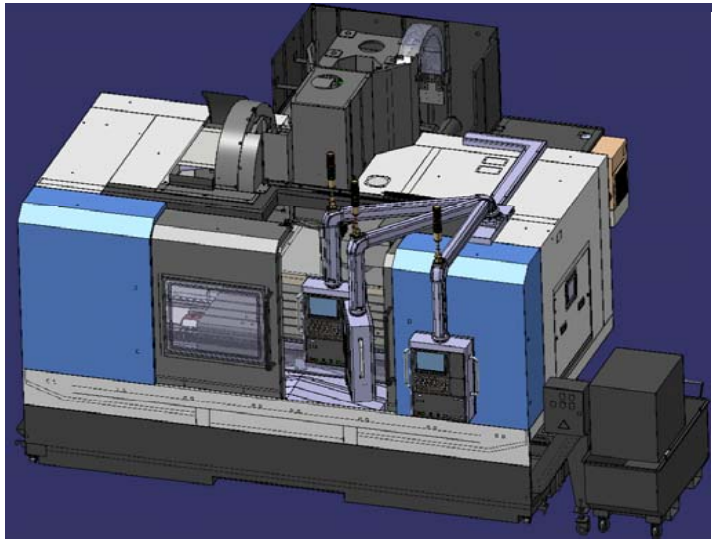
 # Merit

- No sag caused by long length Op panel arm
- No move when OP Box operate.
- OP BOX easily fixed rotation
-Beautiful appearance

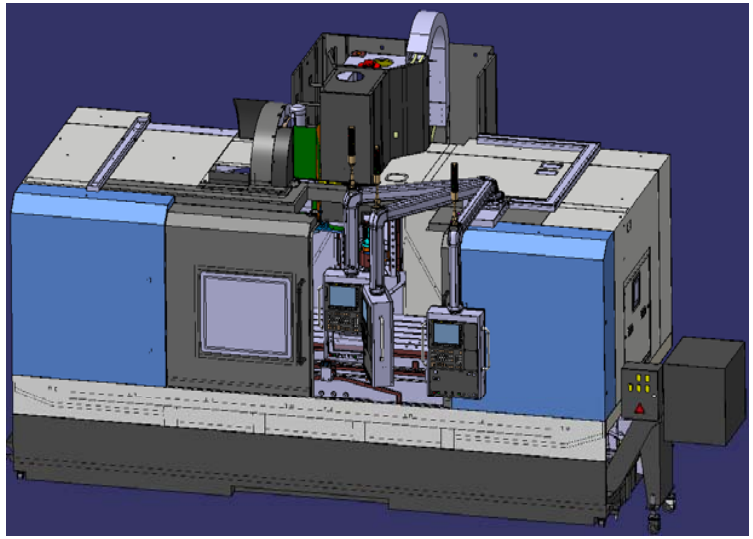
 # Applying date

- Nov.2013.

DNM750



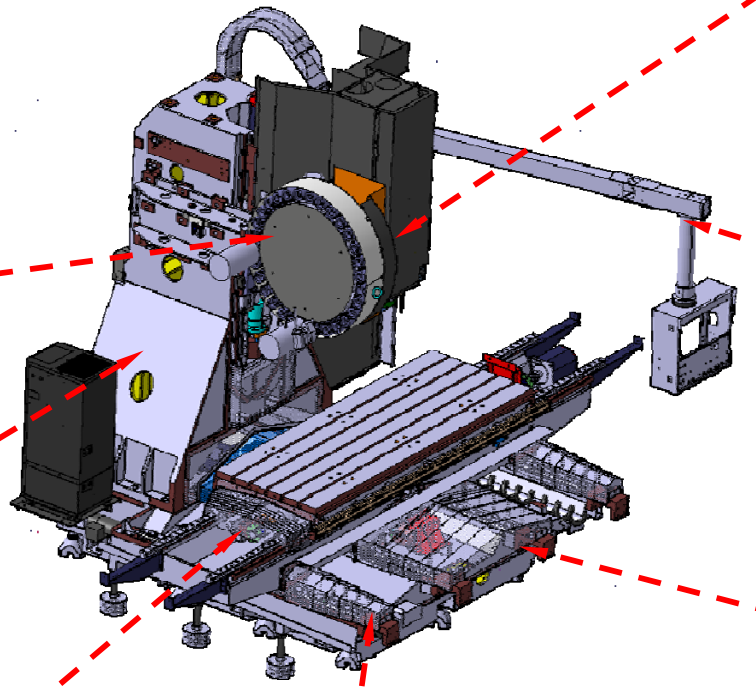
DNM750L



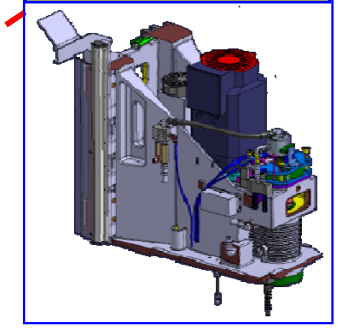
1 DNM series: DNM750(L) Major units & sales point

- 4-Raw LM Guide for Y-Axis (L-Version)
- Waste lub oil Collecting on the bed
- Common ATC for DNM
- Slide cover with linkage
- Ball Screw with Nut Cooling
- Oil Cooler for Spindle –Std.
- Unique design for minimizing heat growth of spindle

- 2ea Operator's Door
- Swiveling Pendant Arm & OP Console.
- Tool loading door beside Tool Magazine



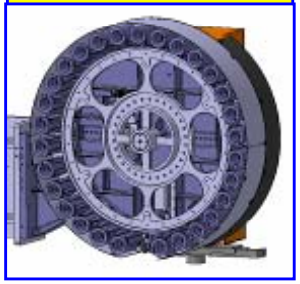
SPINDLE



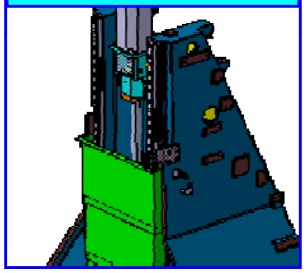
SWIBLING PENDANT ARM

WASTE OIL COLLECTION

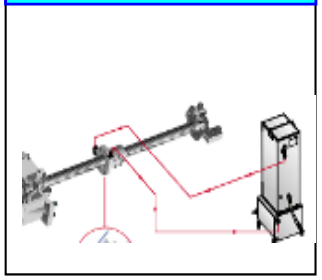
ATC - 30T(40T)



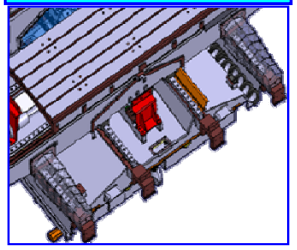
Arch Shaped COLUMN



BALL SCREW NUT COOLING



4-RAILS ROLLER GUIDE



2-Doors

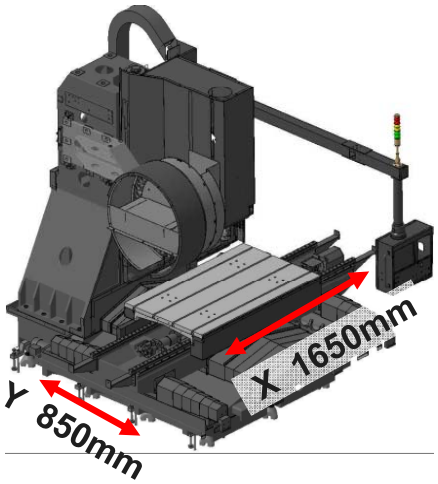
1 DNM series : DNM750(L) Specification

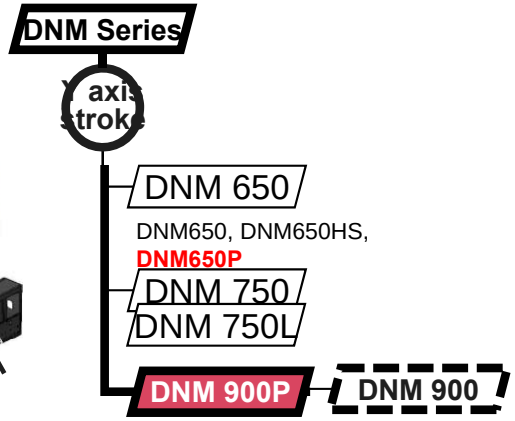
ITEM		UNIT	MAZAK	HAAS		DOOSAN		WIA
			VTC300C(USA)	VF-6/40	VF-7/40	DNM750	DNM750L	VX700
AXIS	X-STROKE	mm	1660	1626	2134	1630	2160	1400
	Y-STORKE		760	813	813	762	762	750
	Z-STROKE		660	762	762	650	650	650
	RAPID(X/Y/Z)	m/min	30/30/30(24) 20/30/30(48)	13.7/15.2/12.7	15.2	30/30/24	24/24/24	24/24/24
	GUIDE TYPE		LMG	LMG	LMG	Roller LM LMG(roller)		LMG
TABLE	SIZE(X x Y)	mm	2000x760	1626x711	2134x711	1630x760	2160x760	1600x750
	MAX. WORKPIECE WEIGHT	kgf		1814	1814	1500	1500	2000
	T - SLOT		5-125x18H8			6-125x18H8	6-125x18H8	5-125x18H8
SPINDLE	TAPER	ISO #	40	40	40	40	40	40(50)
	MAIN SPINDLE DIA	mm				70	70	
	MAX. RPM	RPM	12000	7500	7500	8000(12000)	8000(12000)	8000
	MOTOR POWER	Kw	15	15	14.9	15/22	15/22	15/11
	MAX. TORQUE	kgf.m/rpm		10.4/1400	10.4/5140	11.9	11.9	
ATC	TOOL STORIDGE	EA	24	24	24	30/40/60	30/40/60	24
	TTT/CTC	sec		2.8/3.6	2.8/3.6	1.3/3.7	1.3/3.7	
NC TYPE						F-0iMD	F-0iMD	

1 DNM series _ DNM 900P

Concept

- **HIGH SPEED VMC FOR LIGHT ALLOY**
  - **High precision and high productivity vertical machining center for big & thin workpiece made of light alloy**





Launching / Mass production plan

- **Sales launching in Oct. 2012**

Exhibition plan

Major specifications

- **STROKE (X/Y/Z) 1650/900/500mm**
- **SPINDLE 12000r/min, Taper #40**
- **Table Allowable load 500kg**
- **Number of tool 30 (40)**
- **RAPID TRAVERSE(X/Y/Z) 36/36/36m/min**
- **ATC TIME 1.3sec T-T-T**
- **CNC Controller Fanuc 0iMD with USB port**

Sales points

- **Direct coupled spindle**
- **Minimized table overhang & 4-rows roller LM guide way for Y-axis**
- **Oil cooler(Std) of spindle & ball screw nut cooling**

Target customers / Application

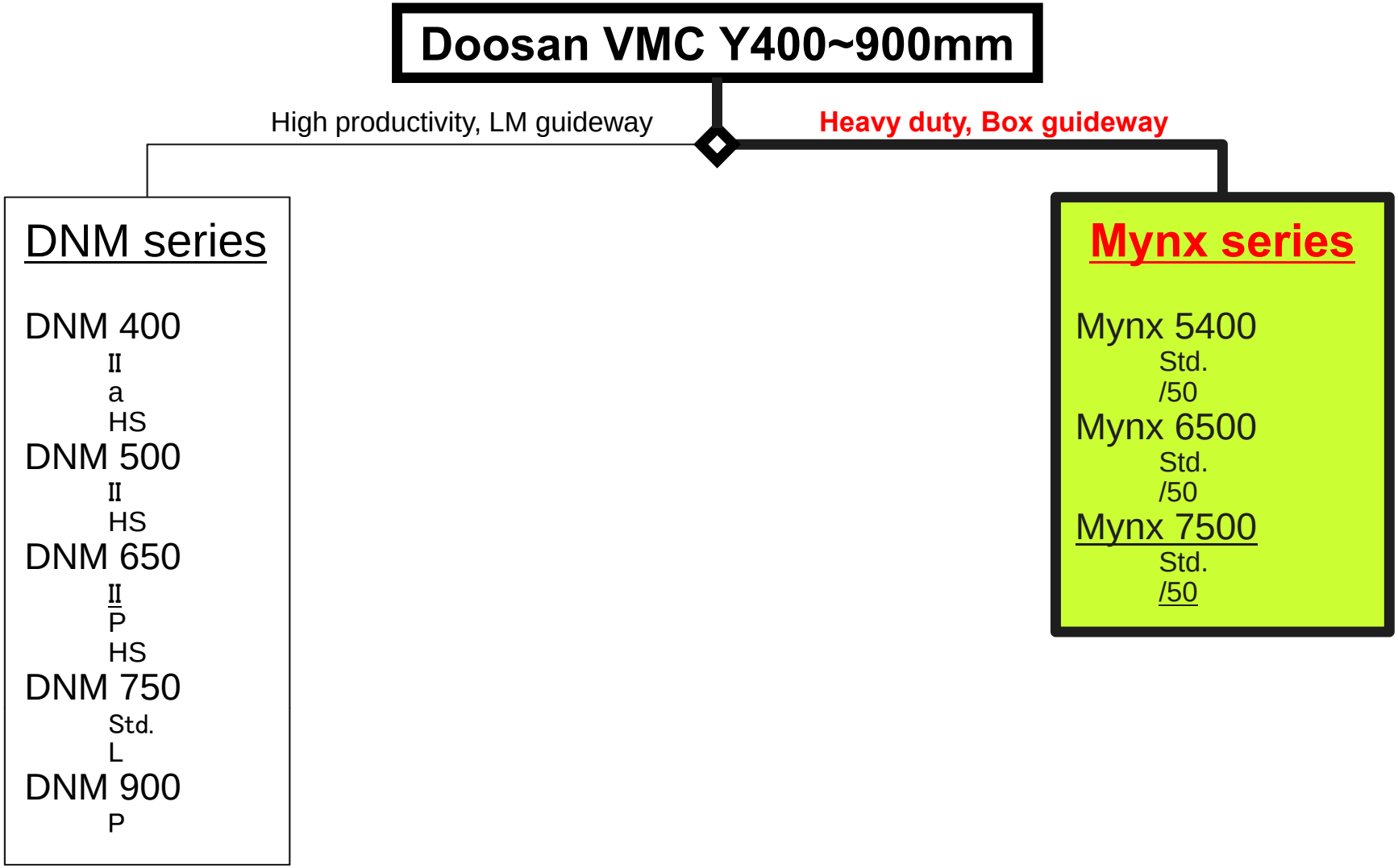
- **Long & thin parts of light cutting customer in Automotive, LCD and Aerospace industry**

BEAM FOR FACTORY AUTOMATION

Competitors / Model

- **Haas VF-6/40**
- **Mazak VTC300CII(UK)**

Concept…


Doosan VMC Y400~900mm
High productivity, LM guideway
Heavy duty, Box guideway
DNM series
DNM 400
II
a
HS
DNM 500
II
HS
DNM 650
II
P
HS
DNM 750
Std.
L
DNM 900
P
Mynx series
Mynx 5400
Std.
/50
Mynx 6500
Std.
/50
Mynx 7500
Std.
/50

Mynx series

Function →

Size ↓

Y travel (mm)	Tool taper	X travel (mm)	Conventional		
			Standard	High speed	Heavy duty
435	#40	635	DNM 400a		
		762	DNM 400 II	DNM 400HS	
540	#40	1020	DNM 500 II	DNM 500HS	
		1020			Mynx 5400
	#50				Mynx 5400/50
670	#40	1400	DNM 650P		
		1270	DNM 650 II	DNM 650HS	
		1270			Mynx 6500
	#50				Mynx 6500/50
762	#40	1630	DNM 750		
		2160	DNM 750L		
		1525			Mynx 7500
	#50				Mynx 7500/50
900	#40	1650	DNM 900P		

1 Mynx series _ MYNX5400/6500/7500

Machine Concept

• Heavy Cutting, High performance for general purpose

MYNX5400 / MYNX6500

MYNX7500

Main Specifications

- STROKE MYNX5400 : 1020 / 540 / 530 mm
  MYNX6500 : 1270 / 670 / 625 mm
  MYNX7500 : 1525 / 762 / 625 mm
- TABLE SIZE MYNX5400 : 1200 x 540 mm, 800kgf
  MYNX6500 : 1400 x 670 mm, 1000kgf
  MYNX7500 : 1600 x 750 mm, 1500kgf
- SPINDLE #40 - 8,000 rpm, 15kw (belt, Std.)
  #50 - 6,000 rpm, 15kw (belt)
  #50 - 6,000 rpm, 22kw (Gear box)
  #50 - 6,000 rpm, 18.5kw (Gear box)
- Rapid TRAVERSE (X/Y/Z) : 30/30/24 m/min
- TOOL STORAGE : #40 - 30T / #50 - 24T
- ATC TIME : #40 - 1.3 sec / #50 – 2.5 sec
- NC : FANUC 0iMD

Applications

- Item required the heavy duty cutting & high productivity

Typical Workpiece

• Vehicle (AL Wheel, Cylinder Block…), Blade, etc..

Main Features

- Rigid C-frame structure with ARCH-shape column.
- High torque spindle for heavy duty
- Dual contact spindle (Big-Plus) is standard feature
- Improved Chip disposal (Built-in screw chip conveyor)
- Pentium Board is standard feature
- 10.4” Color LCD is standard feature
- Y-stroke is longer than the previous model
  Mynx540 : 510mm ➔ Mynx5400 : 540mm
  Mynx650 : 650mm ➔ Mynx6500 : 670mm

Major Competitors

- MORI - Dura, Hass – VF, Mazak - Nexus

Status / Schedule

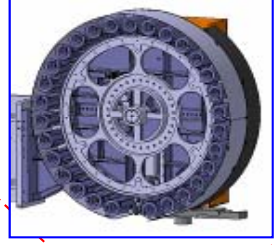
- Mass Production : Feb. 2010 ~

1 Mynx series _ Major units & sales point

TS27R (Opt.)

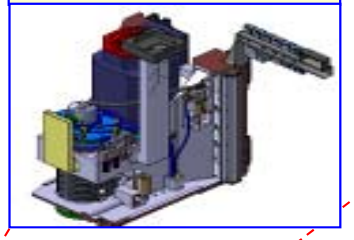
- Automatic tool length measure.
- Thermal error compensation

CAM Type ATC

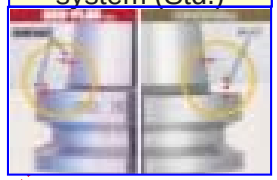


- #40 taper (All Mynx)
  30tool(std) / 1.3sec
  40tool(opt)
- #50 taper
  24tool(std) - Mynx5400
  30tool(opt) - Mynx6500
  40tool(opt) - Mynx7500

8,000r/min (#40 Std.)
6,000r/min (#50 Std.)

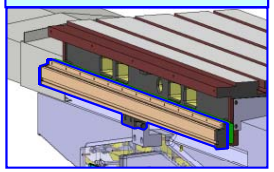


Dual contact system (Std.)

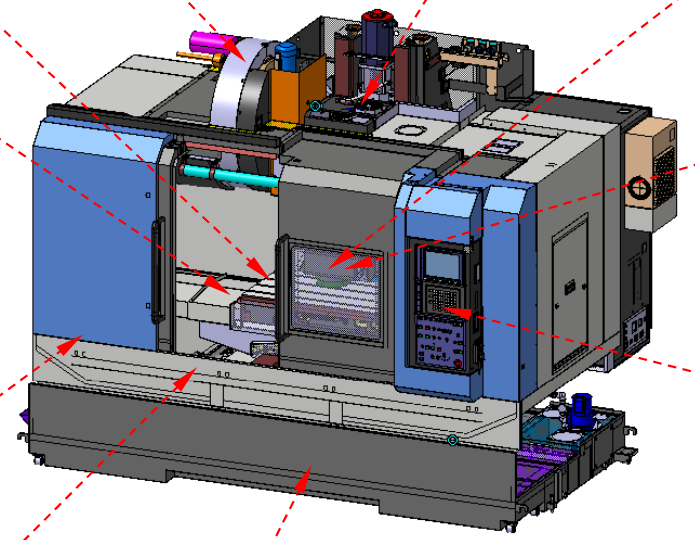


- Machining precision through minimized tool vibration

Linear scale (Opt.)



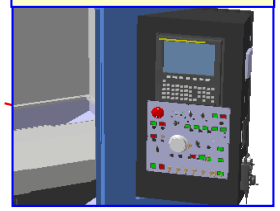
- Direct Feed Back



Air Blow (Opt.)

- Easy MQL application
- Better working circumstance

Swivel OP BOX

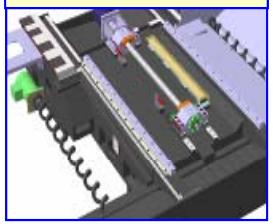


- Fanuc 0iMD
- Fanuc 31i (opt)

Oil Cooler (Opt.)

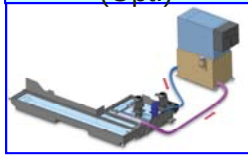
- Spindle head cooling system
- Minimize spindle head thermal displacement.

Screw Conveyor



- Screw conveyor for easy chip disposal

Coolant Chiller (Opt.)

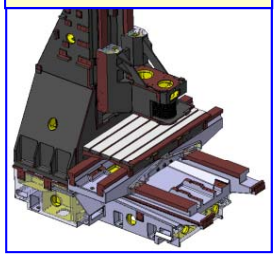


- Restrain thermal deformation by coolant temp. control.

Highly rigid Box Guide

- Wide & thick guideway
- Excellence in vibration absorbing

High rigid structure



Rigid C-frame structure with ARCH-shape column

1 Mynx series _ Specification_vs Competitors.

VMC 6.5호기 이상에서
이송계 Rapid 우수함

		단위	DOOSAN	WIA	DOOSAN	WIA	DOOSAN	WIA
			Mynx5400	F510B	Mynx6500	F600B	Mynx7500	F750B
이송계	이송거리 X / Y / Z (A/C)	mm (deg)	1020/540/530	1100/510/635	1270/670/625	1150/600/600	1100 / 510 / 635	1550 / 750 / 720
이송속도	급속이송속도 X/Y/Z	m/min	30/30/24	30/30/24	**30/30/24**	24 / 24 / 20	**30/30/24**	16 / 16 / 12
테이블	테이블 사이즈	mm	1200 x 540	1200 x 500	1400 x 670	1600 x 580	1600 x 750	1800 x 700
	허용 하중	kg	800	800	1000	1000	1500	2000
스핀들	최대 스핀들 속도	r/min	8000 (6000,12000)	8000	8000(12000)	4500 (8000)	8000(12000) 6000(8000)	4500(8000)
	구동 방식			Belt(gear)		gear	Belt(gear)	gear
	공구 형식	-	**#40(#50)**	#40	#40(#50)	#50	#40(#50)	#50
	스핀들 모터 파워	kW	15/11(22/18.5)	15/11 (20/15)		15/11 (20/15)		18.5/15
	토크	N·m	191.2(165.7)					893/732
자동공구 교환장치	최대 공구 무게	kg	8(15)	8	8(15)	20	8(15)	20
	Tool-To-Tool	sec	**1.3 (2.5)**	2.6	**1.3 (2.5)**	2.5	**1.3 (2.5)**	3.5
	Chip-To-Chip	sec	**3.7(5.5)**	6.6	**3.7(5.5)**	7	**3.7(5.5)**	10
	구 보유수 (#40/#50)	EA	30(40) 24	24 (30)	30(40) 24(30)	20(30)	30(40) 24(40)	20(30)

비절삭시간 확연한 우위로
생산성 우수

VMC 5호기 장비에서
#50버전 운영함

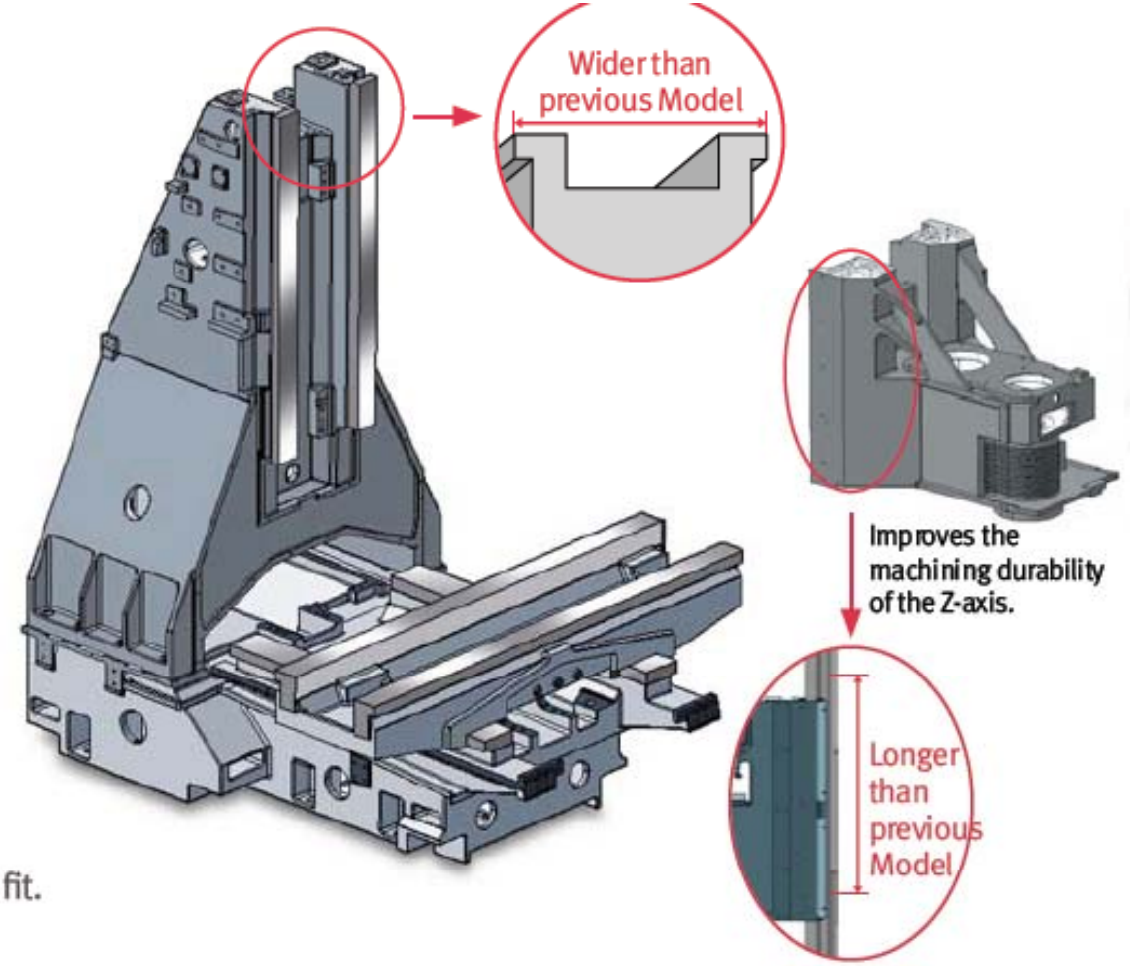
Broader box guideways

Compared to the previous models, the broader box guideways greatly improve the machine's dynamic characteristics.

	Mynx5400	Mynx6500
Z-axis Span width	22% ↑	5% ↑
Z-axis Span Length	32% ↑	8% ↑

Scraping of surface

The sliding surface of each guideway is bonded with Rulon® 142 to reduce friction, then hand scraped for a perfect fit.



A wide selection of spindles

The Mynx series' wide selection of spindles enables customers to optimize performance for various machining operations.

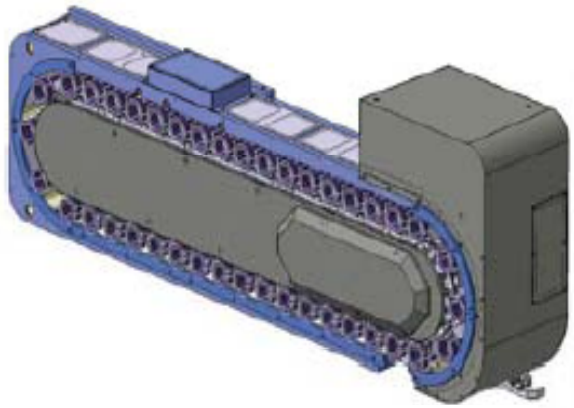
Model	Taper [DIN]	Speed r/min	Power Transmission	Power kW (Hp)		Max. Torque N·m (ft-lbs)
Mynx 5400 Mynx 6500	#40	8000	Belt-driven	std. 15/11(14.8/20.1)	[Con./30min]	191.2 (141.1) [30min]
		12000		opt. 15.6/15.6(20.9/20.9)	[Con./30min]	165.7 (122.3) [30min]
	#50	6000	Belt-driven	Mynx 5400 std. / Mynx 6500 opt. 15/15/11(14.8/20.1/20.1)	[Con./15/30min]	286.4 (211.4) [15min]
				Mynx 5400 opt. / Mynx 6500 std. 15/18.5(20.1/24.8)	[Con./30min]	306.9 (226.5) [30min]
			Gear-driven	opt. 18.5/22(24.8/29.5)	[Con./30min]	452.0 (333.6) [30min]
		8000	Belt-driven	opt. 11/15/15(14.8/20.1/20.1)	[Con./15/30min]	286.4 (211.4) [15min]
Mynx 7500	#40	8000	Belt-driven	std. 22/15 (29.5/20.1)	[Con./15min]	306.7 (226.3) [15min]
		12000		opt. 22/26 (29.5/34.9)	[Con./30min]	165.6 (122.2) [30min]
	#50	6000	Belt-driven	std. 15/18.5 (20.1/24.8)	[Con./30min]	306.7 (226.3) [30min]
				opt. 18.5/22 (24.8/29.5)	[Con./30min]	365.5 (269.7) [30min]
			Gear-driven	opt. 18.5/22 (24.8/29.5)	[Con./30min]	464.3 (342.7) [30min]
		8000	Belt-driven	opt. 11/15/15 (14.8/20.1/20.1)	[Con./15/30min]	286.4 (211.4) [15min]

A wide selection of tool magazine

Model	Taper	Tool std.	Tool opt.
Mynx 5400	#40	30	40
	#50	24	-
Mynx 6500	#40	30	40
	#50	24	30 *
Mynx 7500	#40	30	40
	#50	24	40 *

Drum type magazine with CAM

Loop type magazine with CAM *



Tool storage capacity

	Previous model	Mynx series
Taper #40	24 tools	30 tools std., 40 tools opt.
Taper #50	16 tools	24 tools std., 30 tools opt., 40 tools opt.

1 Mynx series _ Specification

	Features		Unit	Mynx 5400	Mynx 5400/50	Mynx 6500	Mynx6500/50	Mynx 7500	Mynx 7500/50
Travels	Travel (X / Y / Z-axis)		mm (inch)	1020/540/530 (40.2/21.3/20.9)		1270/670/625 (50.0/26.4/24.6)		1525/762/625 (60.0/30.0/24.6)	
	Distance from nose to table top		mm (inch)	150-680 (5.9-26.8)	200-730 (7.9-28.7)	150-775 (5.9-30.5)	200-825 (7.9-32.5)	150-775 (5.9-30.5)	200-825 (7.9-32.5)
	Distance from center to column		mm (inch)	567 (22.3)		722 (28.4)		785 (30.9)	
Feedrate	Rapid traverse (X / Y / Z)		m/min (ipm)	30 / 30 / 24 (1181.1 / 1181.1 / 944.9)					
	Cutting feedrate		mm/min (ipm)	12000 (4724.4)					
Table	Table size		mm (inch)	1200 x 540 (47.2 x 21.3)		1400 x 670 (55.1 x 26.4)		1600 x 750 (63.0 x 29.5)	
	Table loading capacity		kg (lb)	800 (1763.7)		1000 (2204.6)		1500 (3306.9)	
	Table surface		mm (inch)	4-125 x 18H_8 (4-4.9 x 0.7H_8)		5-125 x 18H_8 (5-4.9 x 0.7H_8)		6-125 x 18H_8 (6-4.9 x 0.7H_8)	
Spindle	Max. spindle speed	Belt	r/min	8000 {12000}	6000 {6000, 8000}	8000 {12000}	6000 {6000, 8000}	8000 {12000}	6000 {8000}
	※ Refer to page 6	Gear	r/min	-	{6000}	-	{6000}	-	{6000}
	Spindle Taper			ISO #40, 7/24 Taper	ISO #50, 7/24 Taper	ISO #40, 7/24 Taper	ISO #50, 7/24 Taper	ISO #40, 7/24 Taper	ISO #50, 7/24 Taper
	Max. Torque	Belt 8000 (12000)	N·m (ft-lbs)	191.2 {165.7} (141.1(122.3))	-	191.2 {165.7} (141.1(122.3))	-	140.1 {165.7} ((122.3))	-
	※ Refer to page 6	Belt 6000	N·m (ft-lbs)	-	286.4 (211.4) {306.9(226.5)}	-	306.9 (226.5) {286.4(211.4)}	-	306.9 (226.5) {365.5(269.7)}
		Gear 6000	N·m (ft-lbs)	-	{452.0(333.6)}	-	{452.0(333.6)}	-	{452.0(333.6)}
		Belt 8000	N·m (ft-lbs)	-	{286.4(211.4)}	-	{286.4(211.4)}	-	{286.4(211.4)}
ATC	Type of tool shank *			BT,DIN 40	BT,DIN 50	BT,DIN 40	BT,DIN 50	BT,DIN 40	BT,DIN 50
	Tool storage capacity		ea	30{40}	24	30 {40}	24{30}	30{40}	24{40}
	Max. tool diameter Without Adjacent Tools		mm (inch)	80 (3.2) {76 (3.0)} / 125 (4.9)	125 / 220 (4.9/8.7)	80 (3.2) {76 (3.0)} / 125 (4.9)	125 / 220 (4.9/8.7)	80 (3.2) {76 (3.0)} / 125 (4.9)	125 / 220 (4.9/8.7)
	Max. tool length		mm (inch)	300 (11.8)	350 (13.8)	300 (11.8)	350 (13.8)	300 (11.8)	350 (13.8)
	Max. tool weight		kg (lb)	8 (17.6)	15 (33.1)	8 (17.6)	15 (33.1)	8 (17.6)	15 (33.1)
	Tool selection			Memory Random					
	Tool change time (Tool-to-tool)		s	1.3	2.5	1.3	2.5	1.3	2.5
	Tool change time (Chip-to-chip)		s	3.7	5.5	3.7	5.5	3.7	5.5
Motors	Spindle motor	Belt 8000 (12000)	kW (Hp)	15/11 (20.1/14.8) {15.6/15.6(20.9/20.9)}	-	15/11 (20.1/14.8) {15.6/15.6(20.9/20.9)}	-	22/15 (29.5/20.1) {22/26 (29.5/34.9)}	-
	※ Refer to page 6	Belt 6000	kW (Hp)	-	15/15/11 (20.1/20.1/14.8) {18.5/22 (24.8/29.5)}	-	15/15/11 (20.1/20.1/14.8) {18.5/22(24.8/29.5)}	-	18.5/15 (24.8/20.1) {22/18.5(29.5/24.8)}
		Gear 6000	kW (Hp)	-	{22/18.5(29.5/24.8)}	-	{22/18.5(29.5/24.8)}	-	{22/18.5(29.5/24.8)}
		Belt 8000	kW (Hp)	-	{15/15/11 (20.1/20.1/14.8)}	-	{15/15/11 (20.1/20.1/14.8)}	-	{15/15/11 (20.1/20.1/14.8)}
	Feed motor (X / Y / Z)		kW (Hp)	3.0 / 3.0 / 4.0 (4.0 / 4.0 / 5.4)		4.0 / 4.0 / 7.0 (5.4 / 5.4 / 9.4)			